

## REVIEWS AND ABSTRACTS.

Report of the Fourth International Grassland Conference: Great Britain.  
1937. pp. xxxiv and 486. 40s.

A distinguished botanist has made the remark that the whole of man's existence and progress depends upon grass. Some notion of the essential truth of this statement can be got from a perusal of this imposing volume which further bears striking testimony to the real value of botanical science for the practical affairs of life.

Though only one of the applications of botany is dealt with that one is fully covered, and this report is that of the fourth international congress on this subject. This 1937 conference was held at Aberystwyth under the presidency of Professor Stapledon and was attended by representatives from no less than 37 different countries.

The report of proceedings is arranged under six sections together with contributions of a general character that were given at plenary sessions. The last include the presidential address and a striking paper on pasture management in relation to the control of soil erosion. Out of the wealth of material it is perhaps invidious to select individual contributions but of special interest and importance to South Africans are some in the section of Grassland Ecology, such as a paper by J. W. Rowland on factors affecting range management in this country and one by W. R. Chapline on the restoration of range lands in America. Both of these deal with problems of importance to every grassland farmer. Practically every aspect of grassland is dealt with:—management, treatment, hay production and grass drying, soils and soil treatment, artificial pastures, and many others.

Indeed this report is one that deserves the study of all who are interested in the agricultural welfare of the country.

The papers are in English or in German; those in either language have an abstract in the other. The general reports are given in both languages.

R.S.A.

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Erosion and Soil Conservation, by G. V. JACKS and R. O. WHYTE. Herbage  
Publicn. Series. Bulletin 25. Imperial Bureau of Pasture and Forage  
Crops. Aberystwyth. 1938. pp. 206. 5s.

The evil of soil erosion and the problem of soil conservation are now recognised as both widespread and of vital importance for the future of the world. Loss of soil with all its attendant evils is occurring in all countries which experience a seasonal distribution of rainfall. Though the evils are not new ones, at the present time they are probably greater than at any time in history. It is now held with a good deal of confidence that the decay and disappearance of older civilisations can be attributed to loss of soil.

The present bulletin is a compilation that makes an attempt to bring together what is known from a great number of countries of soil erosion and what steps are being taken for conservation. It does not in any way profess

to originality nor does it set out to inculcate any specific views. The accounts of the various countries are based on official reports and on scientific papers. Throughout the editors have maintained an attitude completely impersonal.

The general effect of reading the bulletin is one of depression at the short-sighted and careless destruction of vegetation that has given the start to erosion. The same story is repeated in country after country, destruction of forest, overgrazing, careless cultivation, followed inevitably by erosion with its insidious ever-increasing effects.

That the world is awakening even if slowly to the facts is apparent in the publication of this volume and is a hopeful sign, but even a cursory study of the reports demonstrates that immediate reorganisation of methods on a large scale and often with great accompanying expense is needed to check and combat the progress of soil erosion. The alternative is loss of soil and the production in the very near future of useless sterile desert areas with results of the most obviously serious nature for mankind.

Of the various countries the most full account is that on the United States of America. The problem is very serious there undoubtedly but more than any other country the U.S.A. has realised the magnitude of the evil and taken steps towards conservation on a truly national scale.

The section dealing with South Africa is divided into two parts, the one on the country as a whole, the other dealing with the special problems of the native reserves. The summary given shows that measures are being taken to combat the evils. There is apparent, however, a tendency to deal with local areas individually rather than to put forward a national conservation scheme. The seriousness of the position in this country was fully brought out in the Report of the Drought Investigation Commission published in 1923. Perhaps the reaction that is now taking place is as rapid as can be expected but a continuation of such complacent dilatoriness must lead to losses of incalculable amount.

It is to be hoped that this bulletin which is issued at an exceedingly moderate figure will have a wide publicity. The calm presentation of the facts is in itself a warning that should be taken heed of by everyone with any interest in the land.

R.S.A.

Progress Report on Soil Erosion and Grassland Experiments. University of Pretoria. Grassland Research Committee. 1937.

This report comprises 112 duplicated pages of results of experiments carried on in 1936-37. Twenty-seven different experiments are in progress and together cover a wide range of aspects of the problems. The general scheme of experiments might well serve as a model to others. The ultimate results of the experiments when brought together should be of great interest and importance. This report consists mainly of tables of figures which will be useful for reference.

R.S.A.

Municipal Parks; Layout, Management and Administration, by W. W. PETTIGREW, V.M.H.; Journal of Park Administration. London. (23s. in S. Africa.)

The profession of Public Gardener is one which has only of recent years struggled to general recognition, and many plant lovers have been interestedly awaiting the first monograph on the art from the practical point of view.

Books on gardening and garden architecture are legion, but this, we think, is the first to state plainly the function and work of a municipal superintendent of parks.

To the majority of amateurs this will come as a surprise for, as the title indicates, it is primarily a treatise on administration. Those who seek here the secrets of mass floriculture, of park-tree growing and the thousand and one things that our public parks seem to be able to do so much better than the amateur, will seek in vain.

"Preparing and Reporting on a Scheme for Layout of Land as a Public Park"; the oft repeated "Estimates of Costs of Labour and Materials"; "The Bye-Laws and Their Application"; "Personnel of the Office Staff and Allocation of Duties"; "Office Routine," to select only a few of the twenty-seven chapter headings, give a clear idea of the scope of the work, while the appendix on the different types of form usable in a parks department lends further weight to the administrative emphasis.

We of the British Empire have been apt to take our administration all too traditionally and to leave the young man to learn from bitter experience. Thus, human nature being much the same in all professions, this treatise should prove valuable to many besides those for whom it is primarily intended. There are few sources, other than the somewhat rigid discipline and tradition of the fighting services, whence so clear an exposition of how to administer can be found.

Of more general interest are chapters and sections dealing with horticultural education—horticulture in its public not orcharding sense—education of the public and botanic gardens; and wild and bird life sanctuaries.

We in South Africa, thanks to the initiative of our Park Superintendents' Association, have now a recognised course leading to a National Diploma in Horticulture, but as yet we have few botanic gardens, other than those of Kirstenbosch and Durban, of any note. And, though our Game Reserves may be world famous, the smaller wild and bird life sanctuary seems scarcely to have reached the cognisance of most of our municipalities.

One feature of the work which, while we recognise its value to the health and happiness of the community as a whole, may cause some shadow of regret, is the evident greater stress laid in these times on playgrounds, for young and old alike, and the relegation of the purely aesthetic to a place of more secondary importance.

This book, we feel sure, will find a ready home on the shelves of all interested in Municipal Government and we congratulate Mr. Pettigrew on drawing so clear a picture of a Parks Department at work.

H.B.G.

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The "Critica Botanica" of Linnaeus. Translated by the late SIR ARTHUR HORT, revised by Miss M. L. Green, with an Introduction by Sir Arthur W. Hill. London. Bernard Quaritch, printed for the Ray Society. 1938. Price 12s. 6d.

The Ray Society has done botany a signal service by publishing an excellent translation of this important work by Linnaeus, prepared by the late Sir Arthur Hort. As Sir Arthur Hill points out in the introduction it is a sad reflection on the present day that such a translation should be necessary. In the days of Linnaeus Latin was the *lingua franca* among all scientific men.

To-day there are few botanists who are completely at home in this tongue, consequently the works of Linnaeus, apart from the ones dealing with his system of classification, are less well known than they deserve to be.

The *Critica Botanica* is an interesting work from the point of view either of its historic value or of the penetrating remarks of its author on the principles of systematic botany. In 1737, the date of the publication of this work, utter confusion reigned among botanists with regard to the naming of plants. The same plant was given different names by various authorities and there was no guidance as to which of these names was the correct one. In this work Linnaeus lays down definite rules with regard to both generic and specific names. It is important to bear in mind that at this time the binary system of nomenclature adopted by Linnaeus at a later date was not established, and the specific name was frequently a phrase intended to be a diagnosis of the species. Consequently Linnaeus objected to such procedure as the inclusion of the name of the discoverer or any other person as part of the specific name. Later on when the specific name lost its diagnostic character and became merely a term of reference, many of the objections sustained here ceased to have any significance. Thus in the *Species Plantarum*, published in 1753, we find Linnaeus giving specific names, many of which are directly opposed to the rules laid down in this present work.

Some of the lines have a surprisingly modern air. In discussing what constitutes a good species Linnaeus states: "the botanist who has been more accustomed to handle herbarium specimens than living plants, fancies that the smallest difference is the mark of a distinct species. . . . Again those who only cultivate plants in gardens where they often undergo variation, commonly believe that they possess more species than they really have unless they take the pains to study the plants in the wild state." These words could only have been written by a man whose knowledge of plants was based on a wide experience. They are as true to-day as they were two hundred years ago. This work leaves an impression of a great man in whom sound common sense was allied to an acute and orderly mind, and we are grateful for this attractive translation which renders the *Critica Botanica* accessible to any botanist. It is well worth careful study.

M.R.L.

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The Naming of Plants, by VERA HIGGINS, M.A. Edward Arnold. 4s. in South Africa.

The author, who is well known for her work in editing *The Bulletin of the Alpine Garden Society* and *The Cactus Journal*, has here attempted that most difficult task—the exposition of a scientific technicality in a popular way. And she has so far succeeded that the remark on the wrapper "The Book for Every Gardener" can be heartily endorsed. Indeed, we feel that many a professional botanist will profit in understanding through reading these pages.

By way of introduction the book discusses the history of plant naming and speaks in very readable fashion of those plant characteristics found most useful in the business of classifying.

We are then taken through the intricacies of the international rules of nomenclature both from the botanical point of view and from the point of view of those which have resulted from the Horticultural Congresses of London, Paris and Rome, in a very straightforward way.



The chapter on "Practical Applications" that follows is both interesting and sensible and we feel sure that most of us will be ready to put many of the suggestions into practice. Much confusion in plant naming can be saved along these lines.

Throughout the book there is some hint of a developing antipathy between the gardener and the botanist which we are fortunately able to aver has not appeared in South Africa. This timely publication will, we feel sure, do much to prevent its coming in the future.

H.B.G.

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The Vegetation of South Africa, by R. S. ADAMSON, M.A., D.Sc., British Empire Vegetation Committee. London. 1938. 10s.

This is at once one of the most interesting and intriguing books that we have read. In turning the last page we put it down with a keen sense of indebtedness to the author. A generous account of South African vegetation, such as this, has long been needed. If, all too often, our interest is brought to a point where the fact that we do not know enough to proceed further breeds exasperation, surely it is a book that will prove a source of inspiration to research to those younger of us, students of Africa's vegetation.

In a disarming preface Professor Adamson expects criticism from students of other areas than the Cape. This would be easy on points of minor detail but in the broad picture there is not much at which we would cavil except perhaps in the interpretation of the grassland vegetation. Here we think the author follows the earlier work too literally. Certainly the interpretation of *Themeda* as climax in the Transvaal, over much of the Free State and a large portion of Natal would find little support from more northerly investigators. Some statements concerning forest and forest types we feel might also meet with the criticism of those who have spent several years investigating them.

The chapters on physiography, climate and weather, geology and soils present a condensed and precise account that should be particularly useful, while interesting data are presented, particularly in the summary of regional climates on page 56, where these are worked out in relation to regions defined by vegetation type. In dealing with soils we note with some surprise the omission of termites when attention is drawn to the absence of earthworms as a general rule, while reference to a supposed absence of a humus layer in montane forest is also interesting.

The chapter on ecological factors and vegetation is again a useful summary of our knowledge of the problem; the account of our knowledge of biotic factors being in itself a useful indication of how little we know of the interrelationships of non-domesticated animals and the vegetation.

Bush, forest, savanna, grassland and semi-arid vegetation are again usefully summarised in special chapters. The nomenclature of the different stages is perhaps somewhat unequally treated. We find difficulty in understanding precisely what is meant by the term climax and it is manifest that we do not know sufficient to attempt the more subtle distinctions of climax suggested by Clements. The fact that *Themeda* is no longer regarded as important in the grassland vegetation—its grassland nature being in fact questioned—has already been alluded to.

An interesting chapter is devoted to land utilisation and natural products and again forms a very valuable summary though we question whether data

presented on annual mining returns are altogether necessary to an account of the vegetation.

"General Conclusions and Prospects" form very interesting reading. Certain major conclusions appear to be new and thoroughly sound. Chief of these is the recognition of the essential unity of the East African vegetation, in its widest sense, from far in the north to the Cape. Three other large units are recognised. Kalahari Vegetation; Namib Vegetation and Southern African. This last, it is pointed out, has affinities with the East African.

"The Comparison with Other Regions" is instructive and the section devoted to "Natural and Political Boundaries" shows the unreality of present boundaries and the essential naturalness of Rhodes' large view.

We feel that the conclusion of the section devoted to "Changes in Climate" that "the flora has reached a state of equilibrium" may not be generally accepted.

Much of the final section on "Changes in Vegetation" and "Prospects" will meet, we feel sure, with the wholehearted support of South African field workers and we hope that this account, in hands of government power, may result in increased impetus to that work designed to prevent apparently inevitable destruction of our natural resources.

H.B.G.